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ABSTRACT

This article discusses three major reasons why children who can decode the stories in their basal readers may still have problems reading content area textbooks. The reasons include: (1) lack of prerequisite knowledge (including content, discourse, and strategic knowledge); (2) poorly written textbooks; and (3) negative classroom experiences in reading in the content areas. Sixteen references are attached. (RS)

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CENTER FOR THE STUDY OF READING

A READING RESEARCH AND EDUCATION CENTER REPORT

Technical Report No. 432

WHY SOME CHILDREN HAVE TROUBLE READING CONTENT AREA TEXTBOOKS

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WHY SOME CHILDREN HAVE TROUBLE READING CONTENT AREA TEXTBOOKS

Many children who can breeze through the stories in their basal readers have trouble when it comes to learning from their textbooks in science or social studies. This fact is often puzzling to teachers. A popular assumption is that once students have mastered basic reading skills, they should be able to read almost anything. But for several reasons, reading in content area textbooks is different and usually more challenging than reading in basal readers. This article discusses three major reasons why children who are adequate decoders may still have difficulty learning from reading their content area textbooks.

Reason #1. Lack of Prerequisite Knowledge

Children need many types of knowledge in order to learn from reading their textbooks. Important prerequisite knowledge includes *content*, *discourse*, and *strategic knowledge*. The role of these three types of knowledge in reading to learn from content area textbooks is described in this section.

Content Knowledge

Content knowledge refers to knowledge about the topic of the text. Readers draw on their store of knowledge about the topic in constructing an interpretation of a text. Differences in content knowledge can have a significant effect on text comprehension. Obviously, content knowledge figures importantly in reading subject matter textbooks because the text is content-laden, and because the purpose of reading the text is to acquire *new* content knowledge.

Several problems in content area reading are related to content knowledge. First, students may lack prerequisite content knowledge to understand the text. Second, students may have appropriate content knowledge but fail to make use of it during reading. Third, students may have content knowledge that interferes with learning new content.

The problem of missing content knowledge is likely to be a significant problem in learning in the content areas, where students are usually learning *new* information. Often children do not have much prior knowledge of the topics they are reading about, including the vocabulary associated with the topic. With little prior knowledge, students will have trouble constructing meaning from the text, particularly if the text explanation is sparse.

A second problem occurs when students have prior knowledge of a topic but fail to draw on this knowledge during reading. This situation is especially common in school settings (Anderson, Hiebert, Scott, & Wilkinson, 1985). Students may know something relevant to what they are reading about, but fail to make the connection. For example, they may have a pet lizard or snake at home, but not think about what they know about their pet when reading a science lesson on reptiles. Functionally, it is as if they had no prior content knowledge at all.

A third problem can arise if the knowledge that students have and use interferes with new learning. One way that prior knowledge can interfere is when a familiar name or label is associated with a "new" concept. This happens frequently in content area learning. For example, terms like "fault" and "mass" in science, and "cabinet" and "strike" in social studies have subject matter-specific meanings that are quite different from their everyday meanings. To confuse the matter even more, some terms like "state" and "revolution" have very different meanings in science than they do in social studies.

Another way that prior content knowledge can interfere with learning new information is when the "knowledge" is actually inaccurate or incomplete. People cling to their pre-existing knowledge or beliefs with remarkable tenacity. Such faulty content knowledge can greatly impede the learning of new content (Alvermann, Smith, & Readance, 1985; Smith & Anderson, 1984).

In sum, content knowledge can hinder learning from content area textbooks in three ways: if it is missing, if it is present but not used, and if it is present but interferes with new learning.

Discourse Knowledge

Discourse knowledge refers to knowledge about the organization of units of text larger than single sentences. It includes knowledge of the structure of different types of writing.

One reason that children may have difficulty with content area textbooks is that they are unfamiliar with exposition as a discourse type. They may not understand that the intent of exposition is to inform. They may not have learned how exposition is structured in different ways to achieve its purposes. For example, children may not know that a newspaper article, a biographical sketch, and a set of instructions for performing a science investigation are written in quite different ways to achieve quite different purposes.

Children's lack of familiarity with exposition is understandable, for they have had much more experience with narrative than with expository discourse. Most children have had stories read to them; they have seen stories enacted on television and in movies. And, of course, children learn to read by reading simple stories. Furthermore, most of the selections in the basal readers are narratives (Flood & Lapp, 1987). The few expository selections that are included bear little resemblance to the exposition of content area textbooks (Beck, McKeown, & Gromoll, 1986). For example, expository selections in basals are often about unusual topics of high interest to children (e.g., secret codes and buried treasure). Also, they are short and self-contained, bearing little, if any, relationship to surrounding selections. Unfortunately, for many students, what they read in their basal readers constitutes the vast majority of their total reading (Anderson, Hiebert, Scott, & Wilkinson, 1985). Therefore, most students get little practice in reading expository text, and the exposition they do read is not like that of their content area textbooks.

Strategic Knowledge

Strategic knowledge refers to knowledge about behaviors that foster comprehension and learning. Although there is no consensus about critical reading comprehension strategies, a few key strategies have been identified that are consistent with recent theory, supported by research, and teachable in school programs. These strategies include (a) determining what's important in text, (b) synthesizing and summarizing information, (c) using prior knowledge to understand text, (d) drawing inferences, (e) asking questions about the reading, (f) monitoring comprehension, and (g) adapting resources to overcome comprehension problems (Pearson, Dole, Duffy, & Roehler, in press). [The latter two strategies are often referred to as metacomprehension--knowledge and control of comprehension (Baker & Brown, 1984).]

Basal reading programs typically include a few of these strategies on their scope and sequence charts under labels such as "main idea," "drawing conclusions," and "summarizing." But even for the handful of key strategies that are included, the basal manuals actually contain few suggestions for direct instruction of the strategies (Durkin, 1981), nor does much strategy instruction occur in classrooms (Durkin, 1978-79). Content area programs, at least social studies, may also include similar strategies on their scope and sequence charts, but once again, few suggestions for direct instruction are included

(Armbruster & Gudbrandsen, 1986). It appears, then, that students probably learn little about key comprehension strategies, much less how to apply these strategies to their content area reading.

Reason #2. "Inconsiderate" Textbooks

The term "inconsiderate textbooks" refers to textbooks that are difficult to read, understand, and learn from. In the past several years, textbooks have been under attack for their inconsiderateness.

Textbooks may be inconsiderate for many reasons. Some have to do with how understandable the text is. Textbooks have been criticized for the following impediments to comprehension: poor organization, lack of coherence, explanations that are inadequate because facts are merely "mentioned," inappropriate vocabulary, and erroneous or inconsistent information (Anderson & Armbruster, 1984; Anderson, Hiebert, Scott, & Wilkinson, 1985; Tyson-Bernstein, 1988).

Textbooks may also be inconsiderate because they are boring. The writing in textbooks tends to be "choppy, stilted, and monotonous" (Tyson-Bernstein, 1988, p. 21). Or, as Anderson et al. put it, ". . . textbooks for children often do not have features that would arouse and hold a child's interest" (1987, p. 298). Since interest has a strong and pervasive effect on learning (Wigfield & Asher, 1984; Anderson, Shirey, Wilson, & Fielding, 1987), boring textbooks bode ill for content area instruction.

Unfortunately, the features of "inconsiderate" textbooks are not indexed by readability formulas, the traditional means of determining the readability level of a text (Armbruster, Osborn, & Davison, 1985). Therefore, even if students are reading a textbook with a reported readability level appropriate for their grade, it is no guarantee that the textbook will be easy for them to read, understand, and learn from.

"Inconsiderate" textbooks can bore and bewilder even sophisticated adult readers. For children who are not only novice readers but also novices in the content areas, the problem may be overwhelming.

Reason #3. Classroom Experiences with Reading in the Content Areas

Some children have difficulty learning from reading because of their classroom experiences with content area reading. First, a child's previous teacher(s) may have coped with the problem of students who could not read the textbook by putting the books back on the shelves and "telling" the content. This is a reasonable solution to the immediate problem of "covering" the content. Unfortunately, a side-effect is that children are further deprived of practice in reading exposition, so they will be that much further behind in content area reading for next year's class.

Second, many teachers rely on "round robin" oral reading to solve content area reading problems. Oral reading can enhance reading achievement for disabled readers under certain conditions, such as repeated oral practice on the same text and teacher modeling of fluent reading (Hoffman, 1987). But these conditions probably seldom occur in content area classes. In addition, there are disadvantages to round robin reading, including (a) possible inattention to reading because many children do not like to hear their peers read, particularly peers who are less than fluent readers, (b) frequent disruptions in the "flow" of reading as errors are corrected and transitions are made from reader to reader, and (c) further lack of practice in independent, silent reading of exposition.

Third, reading in the content area is often fragmented. Either by following the teacher's manual or their own inclinations, teachers tend to interrupt reading frequently in order to ask questions. Many of these questions, at least in the teacher's manual, are "lower level" questions focusing on details; few questions ask students to synthesize information over extended text (Armbruster & Ostertag, 1988).

Some possible unfortunate results are (a) children may fail to see the forest for the trees--that is, they may miss the "big picture" in the myriad of details, (b) children may develop a set for reading myopically, which will lead them to miss major concepts and themes in later reading materials, and (c) children may become bored with the constant questioning and the focus on details.

Conclusion

This report has outlined several reasons why even "good" readers may have trouble reading their content area textbooks. There is probably no simple reason why content area reading is difficult for any particular child; more likely, several reasons interact in a complex way to make learning from reading textbooks difficult. Obviously, there is no panacea. Rather, the intent of this report was to heighten teachers' awareness of variables in learners, textbooks, and instruction that may be stumbling blocks to their students in content area classes.

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